REMARKS

Claim 1 has been amended to more clearly define Applicants' invention. In particular, this claim has been amended to recite that the particulate matter comprises electrostatically chargeable particles. Support for these amendments can be found throughout the present specification, including paragraph [0053]. Furthermore, claims 8-10 have been amended to provide sufficient antecedent basis for the features recited therein. Also, claims 17-18 have been cancelled without prejudice to filing these claims in one or more continuation applications, and claims 19-53 have been withdrawn in view of a restriction requirement. Finally, new claim 54 has been added which includes the features of claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. Support for this new claim can be found throughout the present specification and claims, including, for example, paragraph [0053]. No new matter has been added. Thus, claims 1-16 and 54 are pending.

Drawings

In paragraph 2 of the Office Action, the Examiner states that the drawings are objected to under 37 CFR 1.83(a) as not showing every feature of the invention specified in the claims. In particular, the Examiner states that the vessel having at least two parallel thermoplastic sheets, two or more support members defining one or more channels must be shown or the feature(s) cancelled from the claim(s).

In order to expedite prosecution of the present application, Applicants have cancelled claims 17 and 18, which include the feature described by the Examiner. Applicants reserve the right to file these claims in one or more continuation applications.

Specification

In paragraph 3 of the Office Action, the Examiner states that the abstract of the disclosure is objected to because it uses phrases that can be implied, such as "The invention provides", and states that correction is suggested.

In response, Applicants have provided herein an amended abstract in which the phrase "The invention provides" has been deleted.

Applicants have also provided an amended paragraph [0034] in which a typographical error relating to the identification of the carrier assembly is corrected to be "42".

Claim Objection

In paragraph 4 of the Office Action, the Examiner states that claim 18 is objected to because of an informality. In particular, the Examiner states that the parenthesis surrounding the terms should not be used, and states that appropriate correction is suggested.

As noted above, claim 18 has been cancelled without prejudice to filing this claim in one or more continuation applications, making the objection moot.

Rejection of Claims under 35 U.S.C. § 112

The Examiner has rejected claims 8-10 and 17 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In paragraph 6 of the Office Action, the Examiner states that claims 8-10 and 17 recite the limitation "the channels" with insufficient antecedent basis for this limitation in the claims.

Claims 8-10 have been amended to replace the phrase "the channels" with the phrase "the at least a portion of the internal volume of the vessel". This feature is included in claims 1, from which claims 8-10 either directly or indirectly depend.

Claim 17 has been cancelled without prejudice to filing this claim in one or more continuation applications, making the rejection of this claim moot.

Applicant therefore believes that claims 8-10 and 17 are not indefinite and respectfully requests that this rejection be withdrawn.

Rejection of Claims under 35 U.S.C. § 102

The Examiner has rejected claims 1,3,4,6,and 7 under 35 U.S.C. § 102(e) as being anticipated by Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1).

In paragraph 8 of the Office Action, the Examiner states that, regarding claim 1, Rocchio et al. discloses an apparatus for filling a particulate material (115) from a supply container (105) into a vessel (125), which, as schematicall shown in Figure 2c includes a length, a width, and an internal volume. The Examiner also states that, as schematically shown in Figure 5A, the vessel is subjected to a vibratory motion via an actuator (225) as the internal volume of the vessel is being filled with the particulate material to the desired amount. The Examiner concludes that the method as claimed would be inherent during the normal use and operation of the Rocchio et al. device.

Regarding claims 3 and 4, the Examiner states that, as schematically shown in Figures 5B and 5C, the vessel is further subjected to a tamping motion, via a device (at 240 or 250) along the length of the vessel by impacting a portion of the vessel through a stationary surface (at 130). The Examiner concludes that the method as claimed would be inherent during the normal use and operation of the Rocchio et al. device.

Regarding claim 6, the Examiner states that Rocchio et al. discloses that the vessel is simultaneously subjected to the tamping motion and the vibratory motion, and concludes that the method as claimed would be inherent during the normal use and operation of the Rocchio et al. device.

Regarding claim 7, the Examiner states that Rocchio et al. discloses that the vibratory motion is ceased before the vessel is subjected to the tamping motion, and concludes that the method as claimed would be inherent during the normal use and operation of the Rocchio et al. device.

Applicants respectfully disagree. As amended, claim 1 recites a method of filling a vessel with particulate matter, wherein the particulate matter comprises electrostatically chargeable particles. By comparison, Rocchio et al. describes the filling of a receptacle with a powder, such as a powder pharmaceutical formulation (see paragraph [0026]). There is no disclosure anywhere in Rocchio et al. that the described method can be used for filling a receptacle with chargeable particulate matter. There is no disclosure anywhere in Rocchio et al. of electrostatically chargeable powders. Specific issues regarding the handling of this type of particulate matter are, however, discussed in detail in the present application (see, for example, paragraph [0042] and the various embodiments described in paragraphs [0043]-[0049]).

Therefore, since the particulate matter disclosed in Rocchio et al. is very different from that recited in amended claim 1, Applicants believe that this claim is not anticipated by Rocchio et al. Claims 3, 4, 6, and 7, which depend directly or indirectly from claim 1, recite further embodiments of the present invention and, for at least the reasons discussed above, are also not anticipated by this reference.

Applicants therefore believe that claims 1, 3, 4, 6, and 7 are not anticipated by Rocchio et al. and respectfully request that this rejection be withdrawn.

Regarding new claim 54, this claim includes the features of original claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. Since there is no disclosure in Rocchio et al. of this type of particulate matter, Applicants therefore believe that claim 54 is also not anticipated by Rocchio et al.

Rejection of Claims under 35 U.S.C. § 103(a)

Claim 5

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1), as discussed above.

In paragraph 10 of the Office Action, the Examiner states that Rocchio et al. differs from claim 5 in that it does not specifically indicate that the tamping motion subjects the vessel to at least one deceleration of at least about 900 m/s^2. However, the Examiner states that it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ such a deceleration for the tamping motion since discovering an optimum value of a result effective variable involves only routine skill in the art.

Applicants respectfully disagree. Claim 5 depends indirectly from claim 1 and relates to a further embodiment of the method of the present invention in which the tamping motion subjects the vessel to a defined deceleration. As discussed above, claim 1, as amended, recites a method of filling a vessel with particulate matter, wherein the particulate matter comprises electrostatically chargeable particles, and there is no teaching or suggestion anywhere in Rocchio et al. of a method for filling a vessel with this type of particulate matter. Rather, Rocchio et al. describes the filling of a capsule or other receptacle with a powder pharmaceutical formulation.

Therefore, since there is no teaching or suggestion of the particulate matter of present claim 1, Applicants believe that claim 5, which indirectly depends from claim 1, is patentable over Rocchio et al. and respectfully requests that this rejection be withdrawn.

Regarding new claim 54, this claim includes the features of original claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. Since there is no teaching or suggestion anywhere in Rocchio et al. of this type of particulate matter, Applicants therefore believe that claim 54 is also patentable over Rocchio et al.

Claim 2

The Examiner has rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1), as discussed above, in view of Krush et al. (U.S. Patent No. 6,250,792).

In paragraph 11 of the Office Action, the Examiner states that Rocchio et al. differs from claim 2 in that it does not specifically disclose that the vibratory motion is a sinusoidal motion as claimed. However, the Examiner states that Krush et al. disclosed that a vibration device (10) used in a powders filling/dispensing apparatus is known and that the device produces sinusoidal vibration or motion to transfer forces and impact impulses to the container wall to promote free flow of powder material. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Rocchio et al device by employing a sinusoidal vibration or motion, in view of the teaching of Krush et al., in order to disturb the powder in the container to promote free flow of powder. The Examiner also concludes that the method as claimed would be inherent during the normal use and operation of the modified Rocchio et al. device.

Applicants respectfully disagree. Claim 2 depends directly from claim 1 and relates to a further embodiment of the method of the present invention in which the vibratory motion is a shock-free, sinusoidal motion. As discussed above, claim 1, as amended, recites a method of filling a vessel with particulate matter, wherein the particulate matter comprises electrostatically chargeable particles, and there is no teaching or suggestion anywhere in Rocchio et al. of a method of filling a vessel with this type of particulate matter. Rather, Rocchio et al. describes the filling of a capsule or other receptacle with a powder pharmaceutical formulation. Since there is no teaching or suggestion of the particulate matter of present claim 1, Applicants believe that claim 2, which directly depends from claim 1, is patentable over Rocchio et al.

Furthermore, Applicants believe Krush et al. does not cure the deficiencies of Rocchio et al. In particular, while Krush et al. describes a vibration device for powders that produces a sinusoidal vibration or motion, there is also no disclosure, teaching or suggestion anywhere in

Krush et al. of filling a vessel with a particulate matter comprising electrostatically chargeable particles.

Therefore, Applicants believe that claim 2 is patentable over Rocchio et al. in view of Krush et al. and respectfully requests that this rejection be withdrawn.

Regarding new claim 54, this claim includes the features of original claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. For at least the reasons discussed above relating to claim 1, Applicants believe that claim 54 is patentable over Rocchio et al. in view of Krush et al. Furthermore, there is no teaching or suggestion anywhere in Rocchio et al. of this type of particulate matter, and Krush et al. does not cure this deficiency. Applicants therefore believe that claim 54 is also patentable over Rocchio et al. in view of Krush et al.

Claims 8-11

The Examiner has rejected claims 8-11, as best understood, under 35 U.S.C. § 103(a) as being unpatentable over Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1), as discussed above, in view of Niijima et al. (JP 408268534). Applicants have presumed the Examiner had meant to refer to JP08-268534, as noted on the Notice of References cited.

In paragraph 12 of the Office Action, regarding claims 8-10, the Examiner states that Rocchio et al. differs from these claims in that it does not specifically disclose the use of humidified air to reduce the amount of static electricity as claimed. However, the Examiner states that Niijima et al. discloses a powder supply device that includes a vibration device (2) to excite the powder (7) inside the container (at 3) and also discloses that humidified air is injected into the container to discharge or eliminate the static electricity generated by the vibration device (2). The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Rocchio et al. device by injecting humidified air into the powder, in view of the teaching of Niijima et al., in order to eliminate the static electricity generated by the vibration device. The Examiner also concludes that the method as claimed would be inherent during the normal use and operation of the modified Rocchio et al. device.

Regarding claim 11, the Examiner states that the modified Rocchio et al. reference differs in that it does not specifically indicate the relative humidity of about 80% or more as claimed. However, the Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ such a percentage of relative humidity for the humidified air since discovering an optimum value for humidified air of a result effective variable involves only routine skill in the art.

Applicants respectfully disagree. Claims 8-11 depend either directly or indirectly from claim 1 and relate to a further embodiment of the method of the present invention in which static electricity is discharged. As discussed above, claim 1, as amended, recites a method of filling a vessel with particulate matter, wherein the particulate matter comprises electrostatically chargeable particles, and there is no teaching or suggestion anywhere in Rocchio et al. of a method for filling a vessel with this type of particulate matter. Rather, Rocchio et al. describes the filling of a capsule or other receptacle with a powder pharmaceutical formulation. Since there is no teaching or suggestion of the particulate matter of present claim 1, Applicants believe that claims 8-11, which directly or indirectly depend from claim 1, are patentable over Rocchio et al.

Furthermore, Applicants believe Niijima et al. does not cure the deficiencies of Rocchio et al. In particular, referring to the English language abstract of this Japanese reference, while Niijima et al. does disclose the use of humidified air to eliminate static electricity generated by the vibration device an preventing scattering and sticking of a powder, Applicants believe that one skilled in the art would not have modified the device of Rocchio et al. with the device of Niijima et al. since Rocchio et al. does not teach or suggest electrostatically chargeable particles. There is no discussion anywhere in this reference of any issues regarding electrostatic charge. Thus, one skilled in the art would not have been motivated to combine these references and modify the device of Rocchio et al. with any device targeted to discharge static electricity, as recited in the present claims.

Therefore, Applicants believe that claims 8-11 are patentable over Rocchio et al. in view of Niijima et al. and respectfully request that this rejection be withdrawn.

Regarding new claim 54, this claim includes the features of original claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. For at least the reasons discussed above relating to claim 1, Applicants believe that claim 54 is patentable over Rocchio et al. in view of Niijima et al. Furthermore, there is no teaching or suggestion anywhere in Rocchio et al. of this type of particulate matter, and Niijima et al. does not cure this deficiency. Applicants therefore believe that claim 54 is also patentable over Rocchio et al. in view of Niijima et al.

Claims 12 and 13

The Examiner has rejected claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1), as discussed above, in view of Sato et al. (U.S. Patent Publication No. 2004/0134560).

In paragraph 13 of the Office Action, the Examiner states that Rocchio et al. differs from claims 12 and 13 in that it does not specifically disclose the use of humidified air to reduce the amount of static electricity as claimed. However, the Examiner states that Sato et al. discloses a powder supply device which includes a corona charging device (29) to ionize air for the purpose of delivering ions to surfaces to be charged. The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Rocchio et al. device by employing a corona discharge device, in view of the teahcing of Sato et al., in order to apply a uniform charge of positive polarity across the entire surface of the receptacle. The Examiner also concludes that the method as claimed would be inherent during the normal use and operation of the modified Rocchio et al. device.

Applicants respectfully disagree. Claims 12 and 13 depend either directly or indirectly from claim 1 and relate to a further embodiment of the method of the present invention in which the atmosphere surrounding a point where the particulate matter enters the internal volume of the vessel is ionized. As discussed above, claim 1, as amended, recites a method of filling a vessel with particulate matter, wherein the particulate matter comprises electrostatically chargeable particles, and there is no teaching or suggestion anywhere in Rocchio et al. of a method for filling such a vessel with this type of particulate matter. Rather, Rocchio et al. describes the filling of a capsule or other receptacle with a powder pharmaceutical formulation. Since there is no teaching or suggestion of the particulate matter of present claim 1, Applicants believe that claims 12 and 13, which directly or indirectly depend from claim 1, are patentable over Rocchio et al.

Furthermore, Applicants believe Sato et al. does not cure the deficiencies of Rocchio et al. In particular, Sato et al. relates to a developer filling method for supplying developer to a developer cartridge used in such image forming devices as a printer, a photocopy machine, a facsimile device, or a multifunction device providing a combination of these functions. There is no teaching or suggestion of filling a vessel with particulate matter. Furthermore, while Sato et al. describes the use of a corona discharge, this is only in reference to applying a uniform charge of positive polarity across the surface of a photosensitive drum and not to the filling of a vessel with particulate matter. Therefore, Applicants believe that one skilled in the art would not have modified the device of Rocchio et al. with the device of Sato et al. since the application of corona discharge is not related to any filling method or device.

Therefore, Applicants believe that claims 12 and 13 are patentable over Rocchio et al. in view of Sato et al. and respectfully request that this rejection be withdrawn.

Regarding new claim 54, this claim includes the features of original claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. For at least the reasons discussed above relating to claim 1, Applicants believe that claim 54 is patentable over Rocchio et al. in view of Sato et al. Furthermore, there is no teaching or suggestion anywhere in Rocchio et al. of this type of particulate matter, and Sato et al. does not cure this deficiency. Applicants therefore believe that claim 54 is also patentable over Rocchio et al. in view of Sato et al.

Claims 14-16

The Examiner has rejected claims 14-16 under 35 U.S.C. § 103(a) as being unpatentable over Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1), as discussed above.

In paragraph 14 of the Office Action, the Examiner states that Rocchio et al. differs from these claims in that it does not use a powder comprising a metal oxide aerogel particle as claimed. However, the Examiner concludes that it would have been obvious to one or ordinary skill in the art at the time the invention was made to have modified the Rocchio et al. device to fill powder containing metal oxide aerogel particles. The Examiner states that such a modification would be considered a mere choice of a preferred filling material on the basis of its suitability for the intended use, especially since Applicants have disclosed that the method can be used to fill the receptacle with any suitable particulate matter. The Examiner also concludes that the method as claimed would be inherent during the normal use and operation of the modified Rocchio et al. device.

Applicants respectfully disagree. Claims 14-16 depend either directly or indirectly from claim 1 and relate to a further embodiment of the method of the present invention in which the particulate matter comprises either selected metal oxide aerogel particles or selected organic aeorgel particles. As discussed above, claim 1, as amended, recites a method of filling a vessel with particulate matter, wherein the particulate matter comprises electrostatically chargeable particles, and there is no teaching or suggestion anywhere in Rocchio et al. of a method for filling such a vessel with this type of particulate matter. Rather, Rocchio et al. describes the filling of a capsule or other receptacle with a powder pharmaceutical formulation. Since there is no teaching or suggestion of the particulate matter of present claim 1, Applicants believe that claims 14-16, which indirectly depend from claim 1, are patentable over Rocchio et al.

In addition, while the present application states that the method of the present invention can be used to fill a receptacle with any suitable particulate matter, "[t]ypically, the method is used to fill the vessel with electrostatically chargeable particles" (see paragraph [0053]).

Examples include those recited in present claims 14-16. By comparison, Rocchio et al. does not disclose, teach, or suggest that such chargeable particulate matter can be used in its described method or device.

Therefore, Applicants believe that claims 14-16 are patentable over Rocchio et al. and respectfully request that this rejection be withdrawn.

Regarding new claim 54, this claim includes the features of original claim 1 and further recites that the particulate matter comprises metal oxide aerogel particles. Since there is no teaching or suggestion anywhere in Rocchio et al. of this type of particulate matter, Applicants therefore believe that claim 54 is also patentable over Rocchio et al.

Claims 17 and 18

The Examiner has rejected claims 17 and 18under 35 U.S.C. § 103(a) as being unpatentable over Rocchio et al. (U.S. Patent Publication No. 2004/0003866 A1), as discussed above.

In paragraph 15 of the Office Action, regarding claim 17, the Examiner states that Rocchio et al. differs from this claim, as best understood with out proper support form the specification) in that it does not specifically disclose the structure of the receptacle as claimed. However, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to recognize that the receptacle, as schematically shown in Figure 2C, includes two parallel sheets (the outer walls of the receptacle 125) and two support members (the inner walls of the receptacle 125), wherein the support members define a channel having the internal volume. The Examiner also concludes that the method as claimed would be inherent during the normal use and operation of the modified Rocchio et al. device.

Regarding claim 18, the Examiner states that the modified Rocchio et al. device differs in that it does not specifically disclose sheets including a thermoplastic resin as claimed. However, the Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Rocchio et al. device by employing a thermoplastic resin for the sheets. The Examiner states that such a modification would be considered a mere choice of a preferred material on the basis of its suitability for the intended use, especially since Applicants also disclose that the method can be used to fill any suitable vessel with the particulate material. The Examiner also concludes that the method as claimed would be inherent during the normal use and operation of the modified Rocchio et al. device.

While Applicants respectfully disagrees, particularly with the Examiner's definition of the features of the present claims with the schematic representation shown in Figure 2C of Rocchio et al., in order to expedite prosecution of the present application, claims 17 and 18 have been cancelled, making the rejection of these claims moot.

Conclusion

In view of the foregoing remarks, Applicants believe that this application is considered to be in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would further expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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